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 **EG&G ROCKY FLATS**

INTEROFFICE CORRESPONDENCE

DATE: July 16, 1990 CWA-KMM-312-90

TO: J. M. Kersh, Environmental Restoration & Waste Management, Bldg. 111

FROM:  J. E. Evered, Environmental Restoration, Bldg. T130B, Ext. 4934

SUBJECT: DELAY IN IMPLEMENTING TREATMENT AND DISCHARGE AT POND B-5

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Pursuant to our discussion of Pond B-5 management last week, I have asked Keith Motyl (Clean Water Act) to furnish the information we needed. He has provided the following details:

Background

Treatment and discharge of Pond B-5 was terminated May 21, 1990. This was a precautionary measure designed to avoid a potential downstream release of contaminants resulting from the Building 444 fire incident. Pond status sheets indicate the Pond B-5 level was at 13 percent of capacity at that time. Subsequent natural rainwater runoff and discharges of treated wastewater from the STP caused the pond volume to increase to 70 percent of capacity by July 6 before transfer/treatment was re-initiated. An analysis of decision-making and resource allocation processes following interruption of B-5 treatment and discharge, and relevant to the accumulation of water in B-5 will be presented.

Issues/Considerations

Concerns about contamination of the sanitary wastewater system by infiltration of tainted fire suppression water originating in Building 444 warranted the shutdown of Pond B-5 treatment and discharge until B-series ponds could be shown to be free of contamination. Suspect contaminants were plating bath reagents, including cyanide. Initially, slight contamination of STP influent water was suggested by low levels of cyanide (50 ppb) which were detected in a holding basin which has been used to collect suspect inflows following the incident. No above-background contaminants were indicated in the downstream impoundments. These initial circumstances surrounding the Building 444 incident led ER to expect a temporary shutdown in treatment and discharge with relatively straightforward resumption (to complete drawdown of Pond B-5) to occur.

Pending a decision by DOE/CDH, ER maintained this expectation until mid-June 1990, when RFO/CDH negotiations determined that restart of B-5 discharge would require complete water quality compliance analyses. The water level in Pond B-5 had reached 50 percent capacity by that time. Resampling and analyses of B-5 water were initiated through the ER contract laboratory June 14, 1990. Results for this sampling became available the week of July 2, and indicated no contaminants in excess of defined limits. In-house (RFP), isotope-specific analyses for plutonium, americium, and uranium were also requested June 16 on an accelerated turnaround time. These results were reported July 6, 1990, and indicated that water quality was well within applicable standards. Laboratory results, which ultimately drove final decisions, required a two to three week turnaround.

While negotiations between CDH and DOE occurred on the resumption of Pond B-5 discharge, ER resources were redirected to other RFP water management projects. ER personnel worked to develop a Water Management Plan—including concept development and drafting of the plan itself

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(9/90 due date), evaluating treatment options, and implementing near-term Zero Discharge options such as Pond C-2 Recycle and longer-term options including Title I design of Pond A-4/Pond B-5 Recycle. In addition, while B-5 pond volume was still considerably below the standard action limit (referenced in the draft *Contingency Plan for Unplanned Releases and Emergency Discharges from Rocky Flats Detention Ponds A-4, B-5, C-2*) of 50 percent capacity, personnel resources were re-allocated to related water management issues and longer-range projects including the following:

1. Close out of spring 1990 water treatment operations, including waste filter disposal.
2. Continuing support to pond water treatment at Pond A-4, Pond B-3, and Pond C-2.
3. Finalizing a near-term plan for treatment of RFP pond water.
4. Developing requirements and organizing emergency response contract.
5. Evaluating dam hardening engineering options.
6. Evaluating pond water dispersion options.
7. General support to engineering projects.
8. Evaluating water quality issues and possible treatment approaches.
9. Providing stand-in group management resources.

An important proactive concern of ER's present effort is the design and installation of Effluent Treatment Facilities (5-Year Plan, ADS 112)—augmented treatment capabilities for the RFP ponds—scheduled for completion and operation this fall. Augmented treatment is required to assure effective removal of radiochemical contaminants that might accumulate in the A, B, and C series ponds. These treatment facilities were designed for year-round operation and will incorporate improved treatment subsystems utilizing flocculants and granular activated carbon (GAC) for removing low-level contaminants.

Present Status

Following the completion of new procurement packages (one for near-term transfer and treatment and one for treatment operations through August, 1991), transfer of water from Pond B-5 to Pond A-4 was initiated July 6, 1990 and treatment of water at both Pond A-4 and Pond B-5 was resumed July 9, 1990. At the time transfer from Pond B-5 to Pond A-4 began, the volume of Pond A-4 was 6.2 Mgal (roughly 20 percent of capacity) with 16.9 Mgal empty volume remaining. Following sampling and analysis of treated waters collected from the treatment systems, release of water will be initiated upon receipt of applicable approvals from CDH/RFO; this approval is expected to require two weeks—a delay largely determined by analytical turnaround. Projections indicate that adequate capacity exists in the A and B series ponds to assure time for demonstrating high quality through analytical testing prior to release.

Lessons Learned and Prevention of a Recurrence

The following recommended actions have been identified:

1. Establish clear criteria for resumption of treatment and discharge through further negotiations between CDH and RFO. Since the ultimate approval for pond discharge is provided by CDH/RFO, and if ER is to conduct adequate pond management activities, prompt

decisions are required regarding analytical requirements and conditions for resumption following unscheduled shutdowns for unusual analytical results or precautionary actions taken to protect downstream water users.

2. Initiate sampling and analysis of pond water prior to 45 percent capacity to avoid excessive pond volumes. The action level for pond sampling will vary depending on precipitation rate and time of the year, but sampling should probably occur near 20 percent capacity to account for analytical turnaround and natural inflows. Nevertheless, runoff and rainfall remain substantially unpredictable and analytical turnaround times of two to three weeks may preclude availability of representative water quality data when discharge is required. With the action level so close to the 10 percent minimum control volume, routine, biweekly sampling for all analytes may be required—especially during spring runoff—to assure representative water quality data are always available. Results from early sampling, i.e., that conducted at low pond levels, may not be representative of higher pond levels due to additional inflow occurring within the analytical turnaround period. ER is developing a program to use meteorological and runoff data to aid in decisions relating to action levels for sampling.
3. Alternate, more flexible contractual arrangements should be put in place to allow for more effective management of treatment and discharge programs. A long-term contractual arrangement should be put in place which allows discontinuities. ER is pursuing a long-term Emergency Response contract to address pond water and other surface water management activities.

Conclusion/Recommendations

Factors contributing to the delay in resumption of B-5 treatment can be placed in four categories: (1) failure to obtain clear direction and restart criteria for resumption of treatment; (2) slow turnaround time for analytical data for decision-making or control of pond water treatment activities; (3) inadequacy of time-based contracts to allow for restart of treatment following extended delays; and (4) the reallocation of available resources to competing, interim and longer-range issues and projects.

Despite increasing resource constraints, pond management has been improved from a prior Pond B-5 action level performance of 85 percent full to that of 70 percent (and "safe" piezometer readings); A-4 pond volume was maintained low to preserve the viability of transfer. Other programmatic requirements and schedules were met.

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